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THE WORLD LEAD MARKET IN THE 1990s:

A REVIEW OF DEVELOPMENTS

Report by the UNCTAD secretariat

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Summary and conclusions

1. The world lead market has recently been largely a buyers' market. This was due to a number of factors, including the economic recession in industrialized countries, an abundant availability of material, more stringent anti-lead legislation for health and environmental protection, further progress in scrap recycling, increased exports from countries of Eastern Europe and reduced imports by China.

2. Following falls of 4.4 per cent in 1990 and 3.5 per cent in 1991, total world consumption of refined lead was steadier in 1992, totalling 5,389 thousand metric tons, virtually unchanged from the previous year. Preliminary estimates for 1993 indicate a modest increase in consumption. While consumption declined in developed market economy countries, it has shown steady growth in developing countries including China for most of the recent years.

3. Supply of refined lead experienced a modest recovery in 1992 after falls in the two preceding years. This was due to an increase in the proportion of recycled scrap (secondary lead). World mine production amounted to 3,166 thousand metric tons in 1992, down 5.2 per cent from 1991.

4. Commercial stocks increased substantially. The material held in London Metal Exchange (LME) warehouses climbed from 23.4 thousand metric tons at year-end 1989 to 261.8 thousand metric tons in mid-1993. The increase in LME stocks would seem to have originated mainly from countries of Eastern Europe. Country stocks (producers', consumers' and traders' stocks) rose by nearly 20 per cent, to attain 405.7 thousand metric tons during the same period.

5. It is estimated that in 1992 world exports of refined lead were down 1.5 per cent, to 1,380 thousand metric tons, while world imports were down by 2.7 per cent, to 1,450 thousand metric tons. Recent developments included shifts in the trade of countries of Eastern Europe which emerged as substantial net exporters instead of net importers as in the past, and the expansion of domestic production in China, which ceased to import refined lead and became a net exporter of the metal instead.

6. Lead ore accounted for 35 to 40 per cent of the international trade in lead (not including scrap). In 1992, the estimated world exports of lead ore were down 3.6 per cent, to 800 thousand metric tons, while world imports were up 1.3 per cent, to 880 thousand metric tons. The rise in imports was presumed to arise from an increase of material shipped to Eastern Europe for toll conversion.

7. Prices of refined lead began to fall in 1991 as a result of the downturn in industrial activity in developed market economies and economies in transition. Since the beginning of 1993 to the time of writing, prices of refined lead had fallen by 14.5 per cent, down to $US 388 per metric ton. LME prices averaged $US 811 per metric ton in 1990, $US 558 per metric ton in 1991 and $US 542 per metric ton in 1992.

8. With recent forecasts pointing to lower consumption in 1993, there is unlikely to be any significant improvement in the short-term outlook of the lead market, which would continue to be affected by an abundance of material and the overhang of substantial stocks. In the longer-term, prospects would improve if industrial activity strengthened as a result of a recovery in world economic conditions. Demand for lead would be further strengthened by greater growth of consumption in the developing countries, particularly the eastern Pacific Rim countries, as their per capita consumption of refined lead rises from the current low level of less than 8 per cent of the developed market economy country level of consumption.

9. Nevertheless, lead faces the challenge of a growing number of negative factors, including the concern about environmental pollution, the increasing use of lead-free batteries and decreasing demand for lead as additives in motor vehicle fuel. Any future improvement in the lead market is likely to be constrained by such developments.

I. DEVELOPMENTS IN DEMAND

10. Demand for lead in a number of consuming countries has become steadier as industrial activity[1] begins its recovery from the recent recession. By country, the largest consumer of refined lead remains the United States, with the Russian Federation ranking second despite recent cutbacks in consumption, followed by Germany and Japan. There are otherwise great differences in demand performance by region and by country.

11. In 1992, total world consumption of refined lead decreased by barely 0.1 per cent to 5,389 thousand metric tons, compared to falls of 4.4 per cent and 3.5 per cent, respectively, in 1990 and 1991 (annex 1). The 1992 decrease occurred solely in developed market economy countries where consumption fell for the third consecutive year from a peak of 3,578 thousand metric tons in 1989. Preliminary estimates indicate a slight increase in consumption of refined lead in 1993 as a result of stronger demand in some important consuming countries, including the United States.[2]

12. Notwithstanding the absolute decline of consumption in the developed market economy countries, their share has remained at over 63 per cent of world demand for refined lead in the last three years. In 1992, consumption remained relatively stable in Germany, the United Kingdom and the United States while it fell in France (2.6 per cent), Italy (4.6 per cent) and Japan (4.8 per cent). These six countries accounted for 83 per cent of the developed market economy country consumption.

13. Consumption in developing countries has showed greater strength than in developed market economy countries. In 1992, it rose to an all-time peak of 980 thousand metric tons, compared to 918 thousand metric tons in 1991. Despite the world economic slowdown of the early 1980s and the 1990s, consumption of refined lead in developing countries grew, on average, at about 4.0 per cent per annum between 1980-1992. However, their per capita consumption of refined lead is still very low, at less than 8 per cent that of the developed market economy countries, which currently exceeds 4 kg per capita. The 1992 increase occurred mainly in Mexico which was the largest consuming country among the developing countries, excluding China. Conversely, consumption fell in both the Republic of Korea and Taiwan Province of China, which were the second and the third largest consumers in the developing world.

14. Demand in countries of Eastern Europe has been seriously affected by sharp falls in industrial activity following recent economic and structural reform. In 1992, their total consumption of refined lead was estimated at 721 thousand metric tons, for the fifth consecutive fall since 1987 when it was estimated at 1,173 thousand metric tons. Lower demand in these countries was accounted for principally by the fall in the consumption of the Russian Federation, recently estimated at only 600 thousand metric tons, compared to 775 thousand metric tons in 1987. Demand in the other countries of Eastern Europe (Bulgaria, the Czech Republic, Poland, Romania and Slovakia) was even more severely curtailed, leading to a decrease of consumption from 279 thousand metric tons to 107 thousand metric tons over the same period.

15. With the rapid expansion of industrial activity in an economy growing at an average rate of 8 to 9 per cent per annum in the 1980s, demand for lead in China has expanded rapidly in recent years. Consumption of refined lead is currently estimated at 250 thousand metric tons. The potential for further growth in consumption is high, given that Chinese per capita consumption is even lower than that of other developing countries.

II. DEVELOPMENTS IN SUPPLY

16. Supply of refined lead experienced a modest recovery in 1992, up 1.0 per cent to 5,612 thousand metric tons following falls of 4.3 per cent and 2.5 per cent, respectively, in 1990 and 1991 (annex I). The sources of refined lead are mine production (primary lead) and recycled scrap (secondary lead).

17. In recent years, the proportion of the latter has been on the rise, largely as a result of the greater efforts made in the developed market economy countries to recycle lead scrap spurred by new environmental regulations. Mine production currently accounts on average for less than 60 per cent of total world lead production compared to 65 per cent in the early 1980s. This proportion is expected to continue to decline in the future.

A. Mine production

18. In 1992, world mine production was estimated to have gone down by 5.2 per cent, to 3,166 thousand metric tons. This was 12 per cent below the peak of 1985 (annex I). Mine production has been affected by a number of factors, including unfavourable price conditions and increased scrap recycling which has reduced consumption of lead ore.

19. Developed market economy country mine production still accounts for 50 per cent of the world output of lead ore although this proportion has been falling in recent years. In 1992, mine production in the developed market economy countries was down 5.2 per cent to an estimated amount of 1,580 thousand metric tons. The fall, which occurred principally in Germany, Greece, Spain and the United States, was partly compensated by increases in Canada, Ireland, Italy and Sweden.

20. Mine production in developing countries is estimated to have gone down by 6.5 per cent, to 661 thousand metric tons in 1992. The decline occurred chiefly in ex-Yugoslavia owing to the difficulties resulting from the on-going war. Production also fell in Argentina, Iran (Islamic Republic of), Myanmar, Peru, Thailand, Turkey and Zambia, but this was largely compensated by increases in India, Namibia, Mexico and the Republic of Korea. The largest producers among the developing countries were Peru, Mexico and Morocco, which together accounted for about two-thirds of developing country production.

21. As in most other mineral and metal sectors, production of lead ore in countries of Eastern Europe has been in decline since 1985. However, the decline would seem to be

levelling off and mine production was estimated at 568 thousand metric tons in 1992 (virtually unchanged from the 1991 level). The Russian Federation accounted for 460 thousand metric tons in 1992, compared to 520 thousand metric tons before the successive cutbacks in 1990 and 1991. In the rest of Eastern Europe. production in 1992 showed recovery in Poland and Romania but decline in Bulgaria, the Czech Republic and Slovakia.

22. China accounts for between 9.0 and 10.0 per cent of world mine production. Like most other other mineral and metal sectors, production rose for most of the 1980s and reached a peak of 341 metric tons in 1989. But unfavourable market conditions, limited reserves and infrastructural constraints have affected further expansion more recently. In 1992, Chinese ore production dropped by 10.3 per cent, to 287 thousand metric tons.

B. Scrap recycling

23. Scrap recycling continues to benefit from anti-pollution legislation enacted in many countries for the protection of the environment. Room for further improvement in such legislation was recently reported to exist.[3]

24. However, the increase in scrap recycling is likely to slow down in the future as most of the recuperable scrap is already being collected for recycling in the developed market economy countries. The rate of recovery of lead scrap from used lead-acid batteries has now attained a very high level in major consuming countries, for example exceeding over 97 per cent in the United States recently. Furthermore, in many applications lead is dissipated, which makes scrap recovery expensive and often impossible. Scrap recycling could, nevertheless, be expected to continue expanding in countries of Eastern Europe and developing countries including China.

25. In 1992, secondary refined production in market economy countries was down 1.5 per cent to 2,174 thousand metric tons. Production has recently been equal, on average, to 51 per cent of the consumption of refined lead metal in these countries, compared to 43 per cent in the early 1980s. However, the progress in scrap recycling has occurred largely in developed market economy countries where secondary production as a proportion of their refined-lead consumption has increased to 54 per cent from 45 per cent during the same period. In contrast, the proportion has only increased to 37 per cent from 35 per cent in the developing countries.

26. Among the developed market economy countries, the major producers of secondary refined lead are the United States, Germany, France, United Kingdom, Japan and Canada,

which together account for almost 85 per cent of the developed market economy production. Secondary refined lead production has grown strongly in Canada, France and the United States but has declined substantially in Japan and the United Kingdom.

27. In the developing countries, the development of recycling facilities has been greatly hampered by the small amount of scrap generated by domestic consumption and the greater lassitude with regard to environmental protection. The major producing countries are Mexico and Brazil, which together accounted for 38 per cent of the secondary refined lead production in 1992. The other significant producers are India, Malaysia and the Republic of Korea, where domestic lead-consuming industries, such as automotive and electronic, have been expanding rapidly.

C. Stock movements

28. Material held in stocks has remained at a substantial level in recent years (annex II) mainly as a result of the fall in demand following the recession in industry and the increase in supply from surplus shipments from the countries of Eastern Europe. Since the drawdowns during the strong market demand of 1988-1989, commercial stocks, including London Metal Exchange (LME) and country stocks, have continued to accumulate. By mid-1993, the material held in such stocks amounted to 653 thousand metric tons, a rise of 80.2 per cent since 1989.

29. The recent rise has been due largely to the increase of LME stocks which rose from 23.4 thousand metric tons in 1989 to 261.8 thousand metric tons in mid-1993. This increase has largely resulted from the build-up of material in Italian warehouses that presumably originated from Eastern Europe. LME stocks, mostly held in the hands of traders, show greater fluctuations as market conditions shift.

30. Country stocks, including producers', consumers' and merchants' stocks, have also risen substantially in recent years to reach 405.7 thousand metric tons in 1992, from 338.8 thousand metric tons in 1989. Despite a limited drawdown in 1993, the material held in such stocks still remains substantial. The country stocks were made up largely of material accumulated in the hand of producers as 'involuntary' stocks in the face of deteriorating market prices. Producers' stocks amounted to 165.9 thousand metric tons in 1991, 205.5 thousand metric tons in 1992 and 243.9 thousand metric tons in 1993 (at mid-year).

31. As regards consumers' stocks, the level depends on economic conditions since they are largely working stocks whose size is a function of the consumers' level of activity. Consumers'

stocks amounted to 154.7 thousand metric tons in mid-1993, compared to 150.6 thousand metric tons at end-1992 and 154.4 thousand metric tons at end-1991. Such stocks are likely to need replenishment once economic activity turns around.

III. DEVELOPMENTS IN TRADE

A. Trade in refined lead

32. International trade in refined lead consists mostly of intra-regional trade, conducted principally among developed market economy countries. Of the current total yearly production, only about one-fourth enters the world market as exports and the rest of the production is consumed domestically.

33. In 1992, estimated world exports of refined lead went down by 1.5 per cent to 1,380 thousand metric tons (annex III), which was lower than both in 1990 and 1991 but higher than in 1989. However, the performance of exports varied greatly among exporting countries. Exports of refined lead decreased in Germany, the Netherlands and the United States, and increased in Australia, Canada, France and Mexico, although the increases in the latter countries were not sufficient to offset the decreases in the former countries. The largest exporters of refined lead were Australia, Canada and Mexico.

34. In 1992, world imports of refined lead fell by 2.7 per cent to an estimated 1,450 thousand metric tons. Imports of refined lead decreased chiefly in Japan, the Republic of Korea and the United Kingdom, but rose in Spain, Taiwan Province of China and the United States. Developing country imports of refined lead have shown strong upward trends recently, largely as a result of growing demand in East and South-East Asian countries.

35. Major shifts also occurred in the trade of countries of Eastern Europe. Before the recent political and economic changes, these countries had been net importers of refined lead but since then the flow has been reversed. In 1992, the countries of Eastern Europe were net exporters, exporting 96 thousand metric tons and importing only 20 thousand metric tons; the figures for 1991 were exports 70 thousand metric tons and imports 40 thousand metric tons.

36. As regards China, the mining capacities which have recently come on stream have led to a sharp fall in its imports while its exports have increased. In 1992, it exported 73 thousand metric tons while its imports dropped to below one thousand metric tons.

B. Trade in lead ore

37. Lead ore accounts for about 35 to 40 per cent of the international trade in lead (not including scrap). Preliminary estimates show that world exports of lead ore decreased by some 3.6 per cent to around 800 thousand metric tons in 1992 (annex III). The developed market economy countries accounted for more than 60 per cent of the export trade in lead ore, a substantial part of which consisted of intra-regional trade such as the trade between countries of the European Union and North America. Developed market economy country exports were estimated at 510 thousand metric tons, compared to 550 thousand metric tons in 1991 and 745 thousand metric tons in 1990. The largest exporters were Canada, Australia and the United States.

38. The weak demand in the export market and expansion of domestic smelting capacity have greatly affected exports from developing countries recently. Developing country exports dropped successively to 316 thousand metric tons in 1990 and 273 thousand metric tons in 1991 from the peak of 355 thousand metric tons in 1989. Estimates indicate that developing country ore exports in 1992 remained unchanged, at around the 1991 level. The largest exporters were Peru, Bolivia and Argentina, which accounted for over 80 per cent of developing country exports.

39. Currently more than 90 per cent of the trade volume in lead ore is shipped to the developed market economy countries, with Japan, the United States, Germany and France being largest importers. Estimates put world imports of lead ores in 1992 at 880 thousand metric tons, an increase of 1.3 per cent, after falling by 16.2 per cent in 1991. The 1992 increase was due mainly to the rise of imports into the Russian Federation where the recent economic reform and restructuring have led to the availability of smelting capacities for toll conversion. This development reversed the decline in the role played by countries of Eastern Europe in the trade of lead ore, which had been affected by the disruption of demand that had sharply reduced ore imports into these countries between 1988 and 1991.

40. Developing country ore imports have remained small and confined mainly to the limited amounts imported by Brazil, India and the Republic of Korea. As regards China, it has played only a marginal role in the trade of lead ore. The quantities of both Chinese exports and imports have been negligible.

IV. DEVELOPMENTS IN LEAD PRICES

41. The recent price behaviour of refined lead has been strongly influenced by world economic conditions. Between 1986 and 1990, the strong performance of the world economies led to prices of refined lead on the London Metal Exchange (LME) virtually doubling, from an annual average of $US 406 per metric ton to an annual average of $US 811 per metric ton or, for a growth rate of 18.9 per cent per annum on average (annex IV). Since, the market has been weakened by falling consumption, shipments from the Russian Federation and China, and the overhang of accumulated stocks. The price gains made in the 1986-1990 years were lost as LME prices plunged from their 1990 highs to below $US 400 per metric tons recently.

42. The lead market entered 1991 with lead metal prices still staying over $US 600 per metric ton. However, the lower buying interest and an abundant availability of materials rendered lead prices unsustainable at that level. The price decline continued into 1992 as the world economy plunged into recession. Even though demand remained strong in developing countries, the price of refined lead continued weakening until the second quarter of the year when a recovery, mainly in the United States, pushed prices back to above the $US 600 per metric ton level; this level was sustained until the third quarter, when the hope for early economic upturns in the world major economies looked more remote and the price decline greatly accelerated as the market entered 1993. Lead prices have fallen by 14.5 per cent since the beginning of the year to reach $US 388 per metric ton at the time of writing.

43. The price of lead ore has only an indirect link with refined lead prices. It generally depends on conversion charges plus penalties depending on ore quality, which are fixed by smelters for converting lead ore into refined lead. The price difference between lead ore and refined lead could vary quite substantially from one period to another as charges are seldom fixed in relation to refined lead prices. On the basis of Metal Bulletin quotes, conversion charges stayed unchanged, between $US 130 and $US 140 per metric tons during 1988-1990, while prices of refined lead rose sharply as noted above. The conversion charges were increased in July 1991 to between $US 150 and $US 160 per metric tons when prices of refined lead had already begun to weaken. Despite further weakening of refined lead prices, another rise in May 1992 brought conversion charges to between $US 170 and $US 180 per metric ton, where they subsequently stayed.

V. CONCLUSIONS

44. With recent forecasts indicating lower lead consumption in 1993, immediate and short-term prospects for substantial recovery look remote in the lead market, which is still affected by an abundance of material and the overhang of substantial stocks. Consumption of lead is strongly dependent on industrial activity. Recovery has been slow following the recession in 1991-1992, particularly in Japan and Western Europe.

45. In the longer term, demand for lead would improve with strengthened economic growth rates in the major world economies, which are forecast to rise in 1994 and 1995. The economic decline in the countries of Eastern Europe is likely to touch bottom and possibly be reversed. As has been seen in the past, the return to a higher industrial activity in these countries would have a beneficial effect on consumption and improve imports of lead. Demand for lead is likely to be further strengthened by continued growth of consumption in developing countries, including China. As industrial activity expands in these countries, their per capita consumption of lead is expected to rise from its current very low level, which is still less than 8 per cent of the per capita consumption in the developed market economy countries.

46. However, the lead industry will also be facing the challenge of a number of negative factors. Lead demand will probably continue to be affected by more stringent legislative measures that are likely to be taken against pollutants for health and environmental protection and by substitution of other materials for lead in many applications, such as the substitution of cadmium batteries for lead-acid batteries. As lead-acid batteries account for over 60 per cent of total lead consumption, any market inroads made by lead-free batteries would have a major impact on lead demand. Further inroads into lead consumption may also be expected from lead-free petrol in substitution for lead-additive petrol, as the number of motor vehicles equipped with catalysers continues to rise.

47. On the supply side, the level of material held in stock could have reached a ceiling following recent increases. A demand recovery is likely to entrain a drawdown of producers' and LME stocks while it strengthens consumers' demand for stock replenishments. As regards mine production, it has been in decline in recent years. While some levelling off from further decline may be expected, there will probably not be an upsurge of production in the near future, unless lead prices rise sharply, an unlikely event in terms of the present market outlook. On the other hand, recycled lead will probably continue its recent rise, to account for an increasing proportion of lead supply on the market.

48. In conclusion, an improvement in the lead market may be expected through a better balance between demand and supply in the longer run rather than in the shorter term. However, such improvement is likely to be limited by a number of factors, including an increase of stringent legislation against pollutants including lead, diminishing demand for lead in a number of applications as a result of technological advance and substitution, and further progress in the collection and recycling of lead scrap.

Notes

1. On average, a change of 1.0 per cent in industrial production brings a change in lead consumption of between 0.3 per cent and 1.0 per cent in most countries (see Rolf Boehnke, "What future for lead" Monthly Metal Bulletin, May 1993).

2. According to the press release of the International Lead and Zinc Study Group (dated 19 October 1993), consumption of lead during 1993 was expected to be about 1.0 per cent less than in 1992.

3. According to a Lead and Zinc Study Group (LZSG) report, there is room for legislative improvement with regard to lead-acid batteries in the countries of the European Union (see LZSG Report on the Progress of Work of the Statistical Committee, LZ/STAT.9322, 8 November 1993).

Annex I

World consumption and production of refined lead and mine production of lead by region, 1984-1992

(Thousand metric tons of metal content)

	1984	1985	1986	1987	1988	1989	1990	1991	1992
A. World consumption of refined lead	5,400	5,438	5,539	5,655	5,776	5,844	5,586	5,393	5,389
Developed market economy countries	3,282	3,240	3,277	3,327	3,427	3,578	3,560	3,466	3,398
Developing countries	665	768	828	871	921	944	834	918	980
Countries of Eastern Europe	1,202	1,162	1,160	1,173	1,148	1,037	904	719	721
Socialist countries of Asia	251	268	274	284	280	285	288	290	290
B. World production of refined lead	5,400	5,469	5,488	5,654	5,858	5,952	5,695	5,554	5,612
Developed market economy countries	3,254	3,185	3,183	3,296	3,470	3,577	3,523	3,521	3,466
Developing countries	699	812	870	908	980	966	869	860	924
Countries of Eastern Europe	1,205	1,227	1,185	1,166	1,197	1,037	951	812	815
Socialist countries of Asia	242	245	250	284	311	372	352	361	407
C. Mine production of lead	3,434	3,588	3,368	3,425	3,388	3,332	3,369	3,341	3,166
Developed market economy countries	1,544	1,650	1,579	1,651	1,622	1,548	1,650	1,667	1,580
Developing countries	871	901	816	771	712	742	725	707	661
Countries of Eastern Europe	726	726	661	646	653	621	608	567	568
Socialist countries of Asia	293	311	312	357	401	421	386	400	357

Source: UNCTAD Commodity Yearbook, UNCTAD, Lead and Zinc Statistics, the monthly bulletin of the International Lead and Zinc Study Group; and World Metal Statistics published by World Bureau of Metal Statistics.

Annex II

World stocks of lead as at year-end, 1986-1993 a/
(Thousand metric tons of metal content)

	1986	1987	1988	1989	1990	1991	1992	1993a/
METAL EXCHANGE STOCK								
London Metal Exchange								
Belgium	7.3	2.4	13.4	0.2	3.1	14.7	17.7	19.6
France	-	0.3	2.9	0.5	0.3	-	-	-
Germany	-	1.0	6.4	0.3	1.0	3.5	4.9	5.4
Italy	0.9	9.4	19.7	6.5	1.4	13.5	12.0	19.1
Neth...lands	8.4	2.4	18.7	4.4	30.4	82.4	130.0	159.9
Sweden	2.7	0.6	0.5	0.5	0.4	1.6	16.2	29.6
United Kingdom	18.5	2.8	-	11.0	12.1	8.0	9.0	10.9
Singapore	-	-	-	-	8.0	2.5	22.9	13.3
U.S.A.	-	-	-	-	-	0.3	-	-
Total	37.8	18.9	61.6	23.4	56.7	126.5	212.7	261.8
COUNTRY STOCKS								
Germany								
at Producers	27.8	49.0	27.8	30.8	24.6	30.4	31.8	39.5
at Merchants	1.4	1.3	1.2	0.4	0.2	0.2	0.5	0.2
at Consumers	30.9	22.0	16.4	20.3	20.2	23.7	23.0	19.9
Total	60.1	72.3	45.4	51.5	45.0	54.3	55.3	59.6
United Kingdom	28.3	24.4	26.7	25.7	22.3	21.8	24.5	26.1
Other Europe								
at Producers	61.3	44.7	68.1	45.9	41.8	60.4	70.9	86.9
at Consumers	24.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total	85.3	65.7	89.1	66.9	62.8	81.4	91.9	107.9
Japan								
at Producers	12.7	7.7	8.9	7.4	6.1	8.5	17.4	19.1
at Merchants	1.9	2.3	2.4	2.2	1.0	1.6	3.8	0.9
at Consumers	21.3	15.7	19.9	19.1	19.1	20.7	19.5	23.9
Total	35.9	25.7	31.2	28.7	26.2	30.8	40.7	49.9
Canada	12.4	14.0	17.0	17.2	8.1	10.7	13.3	11.3
U.S.A.								
at Producers	20.4	21.6	15.4	15.6	25.5	9.1	20.5	32.2
at Consumers	78.0	83.2	85.0	78.6	81.0	67.2	62.6	50.3
Total	98.4	104.8	100.4	94.2	106.5	76.3	83.1	82.5
Brazil	0.4	1.5	4.2	0.5	2.9	..	..	..
Australia	35.6	69.1	28.4	35.8	32.2	26.3	20.5	22.7
Other Countries	4.6	4.5	0.8	18.3	20.0	20.5	31.0	31.0
Total Country Stocks	363.8	364.0	343.2	338.8	326.1	322.2	360.4	405.7
of which:								
at Producers	175.2	212.1	170.6	171.5	161.3	165.9	205.5	243.9
at Merchants	3.3	3.6	3.6	2.6	1.2	1.9	4.3	7.1
at Consumers	185.3	148.3	169.0	164.7	163.6	154.4	150.6	154.7
Total Commercial Stocks	398.8	400.9	404.8	362.2	382.7	448.6	573.0	652.8
STRATEGIC STOCKPILES								
U.S.A.	542.2	545.2	545.2	545.3	545.3	545.3	545.3	545.3

Source: World Metal Statistics, published by World Bureau of Metal Statistics.
a/ as at the end of June 1993

Annex III

International trade in refined lead and lead ore by region, 1984-1992
(Thousand metric tons of metal content)

	1984	1985	1986	1987	1988	1989	1990	1991	1992 a/
A. Refined lead									
World exports	1,338	1,335	1,333	1,340	1,434	1,312	1,413	1,401	1,380
Developed market economy countries	1,001	958	933	937	1,044	894	955	1,001	...
Developing countries	265	309	311	286	302	321	319	294	...
Countries of Eastern Europe	49	50	61	70	56	70	81	70	...
Socialist countries of Asia	23	18	28	47	32	27	58	36	...
World imports	1,346	1,357	1,377	1,353	1,354	1,379	1,635	1,491	1,450
Developed market economy countries	1,000	962	990	934	952	947	1,124	976	...
Developing countries	215	253	265	331	307	332	434	471	...
Countries of Eastern Europe	127	135	110	76	85	63	74	40	...
Socialist countries of Asia	4	7	12	12	10	37	3	4	...
B. Lead ore									
World exports	700	669	749	942	869	873	1,064	830	800
Developed market economy countries	380	380	444	525	489	495	745	550	...
Developing countries	315	280	294	334	317	355	316	273	...
Countries of Eastern Europe	4	4	4	3	3	3	-	-	-
Socialist countries of Asia	1	5	7	80	60	20	3	7	...
World imports	646	693	708	924	982	1,008	1,037	869	880
Developed market economy countries	566	601	621	828	919	930	966	813	...
Developing countries	18	24	32	42	44	49	57	46	...
Countries of Eastern Europe	57	61	49	50	19	29	11	10	...
Socialist countries of Asia	5	7	6	4	-	-	3	-	-

Source: UNCTAD Commodity Yearbook; Lead and Zinc Statistics, the monthly bulletin of the International Lead and Zinc Study Group; and World Metal Statistics, published by World Bureau of Metal Statistics.

a/ Estimates

Annex IV

Prices of refined lead, 1980-1992
(London Metal Exchange, cash settlement)

Year	US dollars per metric ton (annual average)
1980	907
1981	727
1982	546
1983	425
1984	443
1985	391
1986	406
1987	597
1988	656
1989	673
1990	811
1991	558
1992	542

Source: UNCTAD monthly commodity price bulletin, recent issues.